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MICROSCOPY.

THE WHALE'S FOOD AND THE DISCOLORATION OF THE ARCTIC SEAS. —At the second meeting of the thirty-second session of the Botanical Society of Edinburgh, Mr. Brown read a paper "On the Nature of the Discoloration of the Arctic Seas," the results of researches made on his different scientific voyages to the Spitzbergen and Jan Mayen Sea, and Davis Strait and Baffin's Bay in 1860, and to the coasts of Danish Greenland in 1867, in which he enunciated the following conclusions:

1. That the dark, or deep green portions of the Arctic Sea, described by Scoresby, and before him by Davis and Hudson, are local and permanent, though movable to a certain degree by currents and tides.

2. That this discoloration is not caused by Medusæ, but by immense multitudes of a minute silicious moniliform diatom, found almost solely in these discolored portions. He found that when the immense mass of Beroidæ and other forms of medusoid life, sank (as it will do occasionally beneath the surface), that the sea still retained its peculiar color, but that even the immense mass of diatomaceæ would sink down a few feet, and again, without apparent cause, rise to the surface. At a depth of two hundred fathoms the water was free from diatoms, though at the time the muslin of the towing net was dyed with them as it skimmed along the surface.

3. That these diatoms also accumulate under the floes of ice, as it was found that the brown slimy masses adhering to the under surface of the ice was almost wholly composed of this diatom. It was also found that the heat developed by the masses of diatomaceæ adhering to the under surface had hollowed the ice into honey-combed chambers, giving it the whaler's name of "rotten ice," and so fragile as to be easily thrown aside by the iron-shod prows of the early whaler. "It is not, therefore," remarked Mr. Brown, "carrying the doctrine of final causes too far to aver that this diatom by assisting in the breaking up of the floes, so fearful in their majesty, helps to render the Arctic Ocean navigable to the hardy whalemen, as I will hereafter show it does, by furnishing substance to the noble quarry which leads him hither.

4. The food of the *Balæna mysticetus* Linn. was found to consist wholly of the minute animals swarming in these discolored portions; the other species of *Cetacea* living on fishes and other highly developed tissues. These animals consisted of *Entomostraca*, of which the principal were *Cetochilus arcticus*, and *C. septrionalis*, *Pteropoda*, of which the chief is the well-known *Clio borealis* (which it ought, however, to be remarked, does not form such an item in the food of the whale, as is usually supposed), and stalked-eyed Medusæ, comprising various species of Beroidæ, etc. In the stomachs of all these animals he found this diatom, and from after investigation it was proved that their sole food consisted almost wholly of the species in question, and afterwards the same was remarked of the smaller mollusca.

5. It thus appeared that in the strange cycle of being the whale is dependent on the diatom for its existence. "In conclusion, you will allow me to remark," said Mr. Brown, "that I know nothing stranger in all the annals of biology than the strange tale I have unfolded. Protozoon feeding diatom, diatom feeding entomostracon, and entomostracon the whale; in a word, that the most gigantic of living animals,* whose pursuit affords occupation to thousands of tons of shipping, and thousands of seamen, and whose loss to one little Scottish port was last year estimated at £100,000,† is dependent for its existence on a being so small that it takes hundreds to be massed together before they can be visible to the naked eye, and so insignificant that it is unknown to the men who are most interested in its existence—telling how great are little things. The author gave some of the illustrations of representative species afforded by his discoveries, and we may look for further details on the publication of the paper in a few weeks.—*Land and Water.*

WANTED, A ROTIFER.—I have hunted gutters, cisterns, pools, ponds, lakes, ditches, and rivers, and viewed many a "field" alive with wondrous forms of beauty, both animal and vegetable, yet never a Rotifer have I found or seen. I have searched with high powers and low powers, but all in vain. It is true my hunting ground (or water) has been confined to latitude 39°, west longitude 94°-96°, and it may be the object of my search is not an inhabitant of this part of the world. But will some of your correspondents kindly send me a Rotifer if they can find one? I will reciprocate with anything I can find.—W. H. R. L., *Box* 400, *Kansas City, Missouri.*

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The Seventeenth Annual Meeting of the American Association for the Advancement of Science was held August 5-12, at Chicago, Ill. About two hundred and fifty members were present, and upwards of one hundred and fifty papers were presented. We give below the titles of those read in the Natural History Section. During and after the meeting, free excursion tickets were issued by the railroads centering in Chicago, and many of the members availed themselves of the liberality of the Companies to make excursions to Lake Superior, Omaha, La Salle, Dubuque, Galena, and other places of interest. These, with an excursion for an afternoon on the lake, and the brilliant evening entertainments given by prominent citizens

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* Nelson, in his "Skandanavieske Faune," vol. i., gives the weight of the full-grown *Balæna mysticetus* at 100 tons, or 220,000 lbs., equal to 88 elephants, or 442 Polar bears!

† In 1867, the twelve screw steamers of Dundee obtained only two whales amongst them, and it was estimated that the loss to each steamer was £5,000, and the loss to the town was assessed at the figure given.